TITLE OF THE INVENTION

METHOD OF PREDICTING INITIAL INPUT OF NEW PRODUCT,

SYSTEM FOR PREDICTING INITIAL INPUT OF NEW PRODUCT,

AND RECORDING MEDIUM

5

BACKGROUND OF THE INVENTION

The present invention relates to a method of predicting an initial input of a new product which is for predicting a sales volume or market share at the launch of the new product, a system for

10 predicting an initial input of a new product which is for predicting a sales volume or market share at the launch of the new product, and a recording medium which can be read with a computer and which stores a program which causes a computer to predict a sales volume or market share at the launch of the new product.

15 To quickly provide excellent products to a market at low prices is becoming an essential strategy for a company which manufactures and sells products in order to survive in a competition in business, and a cycle of this is becoming shorter and shorter. Meanwhile, how large a share (a market share) would be and how

20 large the production should be based on what level of a predictive volume, i.e., a quantity of the initial launch (an initial input) is an issue for the launch of a new product into a market.

While prediction mechanisms and systems assuming that a future volume is an extension of a past volume have heretofore been

25 already provided, mainly used among methods of predicting an

initial input of a new product has been a method which applies a trend of an existing similar product with reference to a past record of actual sales, shipment and the like or a method which uses preceding experiences, hunch or a wide variety of techniques such

5   as statistical schemes.

However, with such a method, it is difficult to determine which similar product is applicable and predict an initial input amid fierce changes in life cycle.

In addition, there is another problem that a company has

10   been repeating similar experiences but yet to make a specific use of those experiences.   Still other problem is that while it takes time to cultivate professional marketing people, it is difficult to satisfy all in such an environment of today.

Among techniques for predicting an initial input or a share

15   of a new product is a method based on a regression model which is disclosed in Japanese Patent Application Laid-Open No. 9-120395 (1997) and a method based on a questionnaire result on customers who purchased a product and a similar questionnaire-based evaluation result from in-house people which is disclosed in

20   Japanese Patent Application Laid-Open No. 2000-200260.

BRIEF SUMMARY OF THE INVENTION

The present invention has been made in view of the circumstance described above.   Accordingly, an object of the

25   invention according to a first through a fifth aspects is to provide an

initial input prediction method for a new product with which it is possible to predict a sales volume or market share at the launch of the new product into a market.

An object of the invention according to a sixth aspect is to provide an initial input prediction system for a new product with which it is possible to predict a sales volume or market share at the launch of the new product into a market.

An object of the invention according to an seventh through a tenth aspects is to provide a recording medium which can be read with a computer and which stores a program which realizes the initial input prediction method for a new product according to the first through the fifth aspects of the invention and the initial input prediction system for a new product according to the sixth aspect of the invention.

A method of predicting an initial input of a new product according to the first aspect of the invention is a method of predicting an initial input of a new product for predicting a sales volume or market share at the launch of a new product, and characterized by comprising steps of: making more than one people numerically evaluate a plurality of past products and said new product, with respect to a plurality of factors which are considered to influence a sales volume or market share; calculating comprehensive evaluations on said products and said new products for each one of said people based on numerical values with respect to said factors, calculating correlation coefficients between the

comprehensive evaluations on said products by each one of said people and actual sales volumes or actual market shares of said products, obtaining relationships between the comprehensive evaluations on said products by each one of said people and the

5   actual sales volumes or actual market shares of said products, calculating a sales volume or market share of said new product for each one of said people based on the relationships and the comprehensive evaluations on said new product, layering the calculated sales volumes or market shares of said new product for

10   said more than one people based on the correlation coefficients for said more than one people, calculating average values and confidence intervals of the sales volumes or market shares of said new product in the respective layers; and predicting a sales volume or market share of said new product based on the average values

15   and the confidence intervals for the respective layers.

A method of predicting an initial input of a new product according to the second aspect of the invention is a method of predicting an initial input of a new product for predicting a sales volume or market share at the launch of a new product, and

20   characterized in that more than one people numerically evaluate a plurality of past products and said new product, with respect to a plurality of factors which are considered to influence a sales volume or market share, that a structured neural network calculates a sales volume or market share of said new product for each one of said

25   people based on numerical values on said products and said new

products given by each one of said people with respect to said

factors and actual sales volumes or actual market shares of said

products, and obtains said factors contributing to the calculation

and the magnitudes of said factors, that comprehensive evaluations

5   on said products and said new products for each one of said people

are calculated based on the numerical values with respect to said

factors, correlation coefficients are calculated between the

comprehensive evaluations on said products by each one of said

people and the actual sales volumes or actual market shares of said

10   products, the sales volumes or market shares of said new product

calculated for said more than one people by said structured neural

network are layered out based on the correlation coefficients for

said more than one people, average values and confidence intervals

of the sales volumes or market shares of said new product in the

15   respective layers are calculated, and that a sales volume or market

share of said new product is predicted based on the average values

and the confidence intervals for the respective layers, the sales

volumes or market shares calculated for said more than one people

by said structured neural network, and said factors contributing to

20   the calculation and the magnitudes of said factors.

A method of predicting an initial input of a new product

according to the third aspect of the invention is a method of

predicting an initial input of a new product for predicting a sales

volume or market share at the launch of a new product, and

25   characterized in that more than one people numerically evaluate a

plurality of past products and said new product, with respect to a plurality of factors which are considered to influence a sales volume or market share, that a structured neural network calculates a sales volume or market share of said new product for each one of said

5　people based on numerical values on said products and said new products given by each one of said people with respect to said factors and actual sales volumes or actual market shares of said products, and obtains said factors contributing to the calculation and the magnitudes of said factors, that comprehensive evaluations

10　on said products and said new products for each one of said people are calculated based on the numerical values with respect to said factors, relationships are calculated between the comprehensive evaluations on said products by each one of said people and the actual sales volumes or actual market shares of said products, the

15　sales volumes or market shares of said new product are calculated for said more than one people based on the relationships and the comprehensive evaluations on said new product, and that a sales volume or market share of said new product is predicted based on the calculated sales volumes or market shares of said new product

20　for said more than one people, the sales volumes or market shares calculated for said more than one people by said structured neural network, and said factors contributing to the calculation and the magnitudes of said factors.

A method of predicting an initial input of a new product

25　according to the fourth aspect of the invention is a method of

predicting an initial input of a new product for predicting a sales

volume or market share at the launch of a new product, and

characterized in that more than one people numerically evaluate a

plurality of past products and said new product, with respect to a

5   plurality of factors which are considered to influence a sales volume

or market share, that a structured neural network calculates a sales

volume or market share of said new product for each one of said

people based on numerical values on said products and said new

products given by each one of said people with respect to said

10   factors and actual sales volumes or actual market shares of said

products, and obtains said factors contributing to the calculation

and the magnitudes of said factors, that comprehensive evaluations

on said products and said new products for each one of said people

are calculated based on the numerical values with respect to said

15   factors, correlation coefficients are calculated between the

comprehensive evaluations on said products by each one of said

people and the actual sales volumes or actual market shares of said

products, relationships are calculated between the comprehensive

evaluations by each one of said people and the actual sales volumes

20   or actual market shares of said products, the sales volumes or

market shares of said new product are calculated for said more than

one people based on the relationships and the comprehensive

evaluations on said new product, the calculated sales volumes or

market shares of said new product for said more than one people

25   are layered out based on the correlation coefficients for said more

than one people, average values and confidence intervals of the sales volumes or market shares of said new product for the respective layers are calculated, and that a sales volume or market share of said new product is predicted based on the average values

5 and the confidence intervals in the respective layers, the sales volumes or market shares calculated for said more than one people by said structured neural network, and said factors contributing to the calculation and the magnitudes of said factors.

In addition, in the above mentioned first through fourth

10 aspects, the comprehensive evaluations may be calculated through principal component analysis based on the numerical values with respect to said factors.

A method of predicting an initial input of a new product according to the fifth aspect of the invention is characterized in that

15 the relationships between the comprehensive evaluations on said products and the actual sales volumes or actual market shares of said products are calculated through regression analysis in which the comprehensive evaluations are used as a predictor variable and the actual sales volumes or actual market shares are used as a

20 criterion variable.

A system of predicting an initial input of a new product according to the fifth aspect of the invention is characterized in that the method of predicting an initial input of a new product according to any one of the first through the fourth aspects is used.

25 The initial input prediction method for a new product and

the initial input prediction system for a new product according to the present invention allow a model in the structured neural network to receive sales volumes or shares of a plurality of existing products upon their market launch, for example, and evaluations

5   made by more than one people on those existing products, and to learn about relationships between these, whereby a sales volume or market share of a new product at the launch into a market is predicted.   Further, as to those among evaluation items (factors) for the evaluation which are less relevant to the sales volumes or

10   shares (i.e., those not relevant beyond a certain constant value), the relationships between such evaluation items and the sales volumes or shares are suppressed by means of a growth retardant characteristic of the structured neural network, and therefore, it is possible to select an evaluation item which has a strong influence

15   over the sales volumes or shares.

In addition, using a statistical scheme, sales volume or market shares of the new product at the launch into the market is calculated based on past records made by the respective evaluators (which are relationships between the evaluations and the actual

20   sales volumes or shares), the calculated sales volumes or shares upon the market launch are layered out based on correlation coefficients expressing the relationships, and average values and confidence intervals of the sales volumes or market shares in the respective layers are calculated.

25   Further, the calculated average values and the confidence

intervals of the sales volumes or market shares for the respective

layers are compared with the calculated sales volumes or shares

upon the market launch calculated for the respective evaluators by

the structured neural network. Thus, the sales volumes or shares

5   upon the market launch calculated by the structured neural

network become reliable.

Alternatively, the average values and the confidence

intervals in the respective layers may be calculated using the sales

volumes or shares as the sales volumes or shares upon the market

10   launch calculated by the structured neural network.

This makes it possible to predict a sales volume or market

share of the new product at the launch of the new product into a

market. It is also possible to narrow down ambiguous evaluation

items regarding products and choose evaluation items which have

15   the largest influence over the sales volume or market share upon

the launch into the market. It is further possible to quantify vague

evaluations made by the human beings, and therefore, apply to

marketing in the future.

A recording medium according to the seventh aspect of the

20   invention is a computer readable recording medium which stores a

program for causing a computer to predict a sales volume or market

share at the launch of a new product, the recording medium being

characterized by storing a program including: a procedure for

causing a computer to input data which are evaluations in the form

25   of numerical values made by more than one people on a plurality of

past products and the new product, with respect to a plurality of

factors, including actual sales volume or actual market shares of the

products, which are considered to influence a sales volume or

market share; a procedure for causing a computer to calculate

5   comprehensive evaluations on the products and the new products

for each one of the people based on the numerical values with

respect to the factors; a procedure for causing a computer to

calculate correlation coefficients between the comprehensive

evaluations on the products by each one of the people and the actual

10   sales volumes or actual market shares of the products; a procedure

for causing a computer to calculate relationships between the

comprehensive evaluations on the products by each one of the

people and the actual sales volumes or actual market shares of the

products; a procedure for causing a computer to calculate the sales

15   volumes or market shares of the new product for the more than one

people, based on the relationships and the comprehensive

evaluations on the new product; a procedure for causing a computer

to layer out the sales volumes or market shares of the new product

calculated through the procedure for the more than one people,

20   based on the correlation coefficients for the more than one people; a

procedure for causing a computer to calculate average values and

confidence intervals of the sales volumes or market shares for the

respective layers which are created through the procedure; and a

procedure for causing a computer to output the average values and

25   the confidence intervals in the respective layers calculated through

the procedure.

A recording medium according to the eighth aspect of the invention is a computer readable recording medium which stores a program for causing a computer to predict a sales volume or market share at the launch of a new product, said recording medium being characterized by storing: a program for causing a computer to execute a procedure for entering data which are evaluations in the form of numerical values made by more than one people on a plurality of past products and said new product, with respect to a plurality of factors, including actual sales volumes or actual market shares of said products, which are considered to influence a sales volume or market share; a structured neural network which calculates sales volumes or market shares of said new product for said more than one people based on the numerical values with respect to said factors given on said products and said new product given by said more than one people and the actual sales volumes or actual market shares of said products, said structured neural network obtaining said factors contributing to the calculation and the magnitudes of said factors; and a program for causing a computer to execute the following procedures which are: a procedure of calculating comprehensive evaluations on said products and said new products for each one of said people based on the numerical values with respect to said factors; a procedure of calculating correlation coefficients between the comprehensive evaluations on said products by each one of said people and the

actual sales volumes or actual market shares of said products; a procedure of layering the sales volumes or market shares of said new product calculated by said structured neural network for said more than one people, based on the correlation coefficients for said

5 more than one people; a procedure of calculating average values and confidence intervals of the sales volumes or market shares for the respective layers which are created through said procedure; and a procedure of outputting the average values and the confidence intervals in the respective layers calculated through said procedure,

10 the sales volumes or market shares calculated for said more than one people by said structured neural network, and said factors contributing to the calculation and the magnitudes of said factors.

A recording medium according to the ninth aspect of the invention is a computer readable recording medium which stores a

15 program for causing a computer to predict a sales volume or market share at the launch of a new product, said recording medium being characterized by storing: a program for causing a computer to execute a procedure for entering data which are evaluations in the form of numerical values made by more than one people on a

20 plurality of past products and said new product, with respect to a plurality of factors, including actual sales volumes or actual market shares of said products, which are considered to influence a sales volume or market share; a structured neural network which calculates sales volumes or market shares of said new product for

25 said more than one people based on the numerical values with

respect to said factors given on said products and said new product given by said more than one people and the actual sales volumes or actual market shares of said products, said structured neural network obtaining said factors contributing to the calculation and the magnitudes of said factors; and a program for causing a computer to execute the following procedures which are: a procedure of calculating comprehensive evaluations on said products and said new products for each one of said people based on the numerical values with respect to said factors; a procedure of obtaining relationships between the comprehensive evaluations on said products by each one of said people and the actual sales volumes or actual market shares of said products; a procedure of calculating the sales volumes or market shares of said new product for said more than one people based on the relationships and the comprehensive evaluations on said new product; and a procedure of outputting the sales volumes or market shares of said new product calculated for said more than one people through said procedure, the sales volumes or market shares calculated for said more than one people by said structured neural network, and said factors contributing to the calculation and the magnitudes of said factors.

A recording medium according to the tenth aspect of the invention is a computer readable recording medium which stores a program for causing a computer to predict a sales volume or market share at the launch of a new product, said recording medium being characterized by storing: a program for causing a computer to

execute a procedure for entering data which are evaluations in the form of numerical values made by more than one people on a plurality of past products and said new product, with respect to a plurality of factors, including actual sales volumes or actual market

5 shares of said products, which are considered to influence a sales volume or market share; a structured neural network which calculates sales volumes or market shares of said new product for said more than one people based on the numerical values with respect to said factors given on said products and said new product

10 given by said more than one people and the actual sales volumes or actual market shares of said products, said structured neural network obtaining said factors contributing to the calculation and the magnitudes of said factors; and a program for causing a computer to execute the following procedures which are: a

15 procedure of calculating comprehensive evaluations on said products and said new products for each one of said people based on the numerical values with respect to said factors; a procedure of calculating correlation efficients between the comprehensive evaluations on said products by each one of said people and the

20 actual sales volumes or actual market shares of said products; a procedure of obtaining relationships between the comprehensive evaluations on said products by each one of said people and the actual sales volumes or actual market shares of said products; a procedure of calculating the sales volumes or market shares of said

25 new product for said more than one people, based on the

relationships and the comprehensive evaluations on said new product; a procedure of layering the sales volumes or market shares of said new product calculated through said procedure for said more than one people, based on the correlation coefficients for said more

5   than one people; a procedure of calculating average values and confidence intervals of the sales volumes or market shares for the respective layers which are created through said procedure; and a procedure of outputting the average values and the confidence intervals in the respective layers, the sales volumes or market

10   shares calculated for said more than one people by said structured neural network, and said factors contributing to the calculation and the magnitudes of said factors.

A computer which reads the recording medium according to the present invention can be used as the initial input prediction

15   system for a new product of the present invention, and can execute the initial input prediction method for a new product of the present invention.

The above and further objects and features of the invention will more fully be apparent from the following detailed description

20   with accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE

DRAWINGS

FIG. 1 is a functional block diagram showing a structure of

25   an essential portion of an embodiment of an initial input prediction

method for a new product and an initial input prediction system for

a new product according to the present invention;

FIG. 2 is an explanatory diagram which schematically shows

a structure of a structured neural network;

5   FIG. 3 is an explanatory diagram which schematically shows

a neuron;

FIG. 4 is an explanatory diagram which schematically shows

operations of the structured neural network;

FIG. 5 is a flow chart showing operations of the initial input

10   prediction system for a new product according to the present

invention;

FIG. 6 is an explanatory diagram which shows an example of

a questionnaire chart for collecting data;

FIG. 7 is an explanatory diagram which shows an example of

15   an evaluation table;

FIG. 8 is an explanatory diagram for describing operations of

the initial input prediction system for a new product according to

the present invention;

FIG. 9 is an explanatory diagram for describing operations of

20   the initial input prediction system for a new product according to

the present invention;

FIG. 10 is an explanatory diagram for describing operations

of the initial input prediction system for a new product according to

the present invention; and

25   FIG. 11 is an explanatory diagram which shows an example

of a statistical chart.

DETAILED DESCRIPTION OF THE INVENTION

In the following, an embodiment of the present invention will

5   be described with reference to the associated drawings.

FIG. 1 is a functional block diagram showing an essential

structure of an embodiment of an initial input prediction method for

a new product and an initial input prediction system for a new

product according to the present invention.   The initial input

10   prediction system which is formed by a personal computer

comprises an input unit 1 for entering data which are numerical

evaluations made by more than one people regarding a plurality of

factors, including actual shares (or similarly, sales volumes) of a

plurality of past products, which influence shares of the past

15   products and a new product, and an evaluation table creating unit 2

which creates evaluation tables which will be described in detail

from the data received through the input unit 1.

The initial input prediction system for a new product further

comprises a structured neural network 3 which calculates each

20   individual person's new product share based on the evaluation

tables created by the evaluation table creating unit 2 and obtaining

a factor which contributes to the calculation and the magnitude of

the factor, a principal component analysis unit 4 which calculates

comprehensive evaluations by each individual person on the

25   plurality of past products and the new product by means of

principal component analysis based on the numerical values with respect to the respective factors, and a correlation coefficient calculating unit 5 which calculates correlation coefficients between comprehensive evaluations on the respective past products

5 calculated for the respective people by the principal component analysis unit 4 and the actual shares of the past products.

The initial input prediction system for a new product further comprises a regression model creating unit 6 which obtains relationships between the comprehensive evaluations on the past

10 products calculated by the principal component analysis unit 4 and the actual shares of the past products by means of regression analysis in which the comprehensive evaluations are used as a predictor variable and the actual shares are used as a criterion variable, a predictive share calculating unit 7 which calculates a

15 share of the new product predicted by the respective people based on the relationships (a regression model) obtained by the regression model creating unit 6 and the comprehensive evaluations on the new product, a layering & calculating unit 8 which performs layering based on the correlation coefficients for the respective

20 people calculated by the predictive share calculating unit 7 and calculates average values and confidence intervals of the predictive shares of the new product for the respective layers, and a display unit 9 which displays (outputs) the average values of the predictive shares and the confidence intervals in the respective layers

25 obtained and calculated by the layering & calculating unit 8, the

shares for the respective people calculated by the structured neural network 3, a factor contributing to the calculation and the magnitude of the factor.

FIG. 2 is an explanatory diagram which schematically shows a structure of the structured neural network 3. In the structured neural network 3, neurons N as those shown in FIG. 3 are layered out in an input layer including neurons N11 through N13, an intermediate layer including neurons N21 through N24 and an output layer including a neuron N3 so as to constitute a network.

The neurons N11 through N13 in the input layer are each connected with all of the neurons N21 through N24 in the intermediate layer, and the neurons N21 through N24 in the intermediate layer are connected with the neuron N3 in the output layer.

The number of the neurons N11 through N13 in the input layer is equal to the number of input signals, while the number of the neurons N21 through N24 in the intermediate layer is the number needed for computing and determined by an empirical rule.

The neuron N performs weighting on inputs x1 through xn using weights w1 through wn, respectively, adds up the weighted inputs x1*w1 through xn*wn and outputs a resulting value z. The neuron N has a predetermined threshold value with respect to the output z as a growth retardant characteristic, and accordingly, does not output unless the output z is equal to or larger than the threshold value.

The structured neural network 3 provides the neurons N11 through N13 in the input layer with evaluation points made by a certain person each on each one of a plurality of factors which must influence the share of a past product, for example, and when the

5 share of the product is given as a supervisor signal, adjusts the weights w1 through wn so that an error between the output from the neuron N3 belonging to the output layer and the share becomes small.

The structured neural network 3 learns by repeating this on

10 a plurality of past products and accordingly becomes capable of outputting a share in accordance with each evaluation point above made by the certain person and severing connection which is due to a factor not contributing to calculation of the share. As a result, this leaves a predictive share of a new product regarding which the

15 respective evaluation points were entered, a factor contributing to the calculation of the predictive share, and a weight which is a degree of this.

For instance, the learning as that described above applied to seven factors which must influence shares of past products leads to

20 a result as that shown in FIG. 4. The widths of the lines are representative of weights among which some are positive weights increasing shares and others are negative weights decreasing shares.

Although the respective neurons are in mutual connection

25 with each other at the initial learning stage, as the learning

progresses, the mutual connection dissolves gradually, thereby leaving factors of the neurons (5), (7) in the input layer as factors relevant to the shares (output). The factor of the neuron (7), however, is a negative factor.

5   In the following, operations of the initial input prediction system for a new product having such a structure will be described with reference to the flow chart in FIG. 5.

First, the input unit 1 of the initial input prediction system for a new product receives data which are numerical evaluations

10   made by more than one people regarding a plurality of factors, including actual shares of a plurality of past products, which influence shares of the past products and a new product (S2).

The numerical evaluation data made by these people are in the form of a questionnaire chart as that shown in FIG. 6, for

15   example. Evaluation factors which are considered to influence the shares are the sales channel, the function, the design, the price, the quality, the brand and the season. Evaluation scores on the scale of ten points are given on each one of products F1 through F5 each at the launch, an intermediate point and the end with respect to

20   each one of the factors, together with actual shares at the respective time points. Evaluation scores on the scale of ten points are given on a new product with respect to each one of the factors.

Presumably, the higher the evaluation score is, the more a consumer wishes to buy, while the lower the evaluation score is, the

25   less the consumer wishes to buy.

While an evaluation on a certain product is different between different evaluator (people who evaluate), there is only one resultant share yielded. The share therefore can be said to be a value which represents the status or the position of the product.

5   Some evaluators may provide a correct evaluation (which is close to the status determined by the society), while other evaluators may not be as such. Those people who can evaluate closely to the status determined by the society are to be found from a number of evaluators so that a share of a new product will be

10   predicted based on those people's sense.

Next, the evaluation table creating unit 2 creates evaluation tables as those shown in FIG. 7, one each for each evaluator (S4). The evaluation tables are the summary of scores on the respective products F1 through Fn, which are objects 1 through n of evaluation,

15   with respect to the evaluation characteristics (which are the respective evaluation factors) irrespective of the time such as at the launch, an intermediate point and the end, and scores on the new product which is an object X of evaluation with respect to the evaluation characteristics.

20   Next, using the data in the evaluation tables, the structured neural network 3 calculates predictive shares of the new product (S6) and extracts a factor contributing to the calculation of the predictive shares and a weight which is the degree of the contribution (S8), as described earlier.

25   Next, the principal component analysis unit 4 calculates

comprehensive evaluations on the plurality of past products and the
new product by the respective evaluators through principal
component analysis based on the scores with respect to the
respective evaluation factors (S10), and as shown in FIG. 8,

5   summarizes the scores by the respective evaluators with respect to
the respective evaluation factors and principal component scores
which are comprehensive evaluations by the respective evaluators,
on each one of the past products and the new product.   While a
plurality of principal component scores are produced in principal

10   component analysis, to be used here is a score attributed to a first
principal component whose contribution is largest.

Next, the correlation coefficient calculating unit 5 calculates
correlation coefficients between the comprehensive evaluations by
the respective evaluators on the respective past products calculated

15   by the principal component analysis unit 4 (S10) and the actual
shares of these past products (S12), and as shown in FIG. 9,
summarizes the actual shares of the past products, the principal
component scores which are the comprehensive evaluations on the
past products, and the correlation coefficients between these two,

20   for the respective evaluators.

The correlation coefficients have a value between -1.0 and
+1.0.   The closer to +1.0 the value is, the stronger the positive
correlation is.   In general, it is possible to say that the correlation
is strong if a correlation coefficient is +0.7 or larger.   The stronger

25   the positive correlation provided by an evaluator is, the more

suitable the evaluator is considered to be for prediction of a share.

Next, using the principal component scores on the respective past products calculated by the principal component analysis unit 4 (S10) and the actual shares of the past products, the regression

5   model creating unit 6 creates by computing a regression model

$$y = ax + b$$

wherein the principal component score on each past product is a predictor variable x and the associated actual share is a criterion variable y (S14).

10   Next, the predictive share calculating unit 7 calculates predictive shares of the new product predicted by the respective evaluators (S16) based on the regression models for the respective evaluators created by the regression model creating unit 6 (S14) and the principal component scores on the new product by the

15   respective evaluators, and as shown in FIG. 10, summarizes the actual shares of the respective products, the principal component scores on the respective products, the correlation coefficients between these two, and the predictive shares of the new product, for the respective evaluators.

20   Next, based on the correlation coefficients for the respective evaluators calculated by the correlation coefficient calculating unit 5 (S12), the layering & calculating unit 8 layers out the predictive shares of the new product for the respective evaluators calculated by the predictive share calculating unit 7 (S18), and calculates

25   average values and confidence intervals of the predictive shares of

the new product in the respective layers (S20).

The predictive shares of the new product by the respective
evaluators are layered out by the value of the correlation
coefficients for the respective evaluators (for every 0.05 at and

5 beyond +0.6) and the average values and 95%-confidence intervals
of the predictive shares of the new product in the respective layers
are calculated, thereby creating a statistical chart as that shown in
FIG. 11 which describes the number of the evaluators, the lower
limit of the confidence interval, the average value and the upper

10 limit of the confidence interval of the predictive shares for each
layer.

According to the statistical chart shown in FIG. 11, it is
possible to judge that the share of the new product could be
somewhere between 8.0% and 12.2%, particularly between 10.0%

15 and 11.6%.

The layering & calculating unit 8 may layer out the
predictive shares of the new product for the respective evaluators
calculated by the structured neural network 3 (S6) based on the
correlation coefficients for the respective evaluators calculated by

20 the correlation coefficient calculating unit 5 (S12) to thereby
calculate the average values and the confidence intervals of the
predictive shares of the new product in the respective layers.

Next, the display unit 9 displays the statistical chart (FIG.
11) created through the layering and calculation executed by the

25 layering & calculating unit 8 (S20), as well as the charts of the

correlation coefficients and the predictive shares of the new product for the respective evaluators and the results of the operations described above such as the predictive shares by the respective evaluators calculated by the structured neural network 3, the

5   factors contributed to the calculation and the magnitude of the factors (S22).   In addition, the display unit 9 displays the original data from which the results of the operations were obtained, if necessary.

In accordance with the display provided by the display unit 9,

10   it is possible to determine that the predictive share of the new product in the layer which bears the large correlation coefficient given by the evaluators is highly reliable, and hence, to use this predictive share.   It is also possible to narrow down the evaluation factors regarding the product and choose the evaluation factors

15   which have the largest influence over the share at the launch into the market.

While the embodiment described above is on the assumption that personal computers are used, with a computer program for realizing similar operations to those of the initial input prediction

20   system for a new product above recorded on a portable recording medium, such as a magnetic disk and a CD-ROM, or downloaded from a recording medium, such as a memory at the end of a connection line, installed at a center such as a distribution server, for instance, which can communicate the computer program with a

25   personal computer through the line or by radio, it is possible to

cause a personal computer to carry out an image processing method for prediction of an initial input of a new product as in the embodiment described above.

Using the initial input prediction method for a new product according to the first aspect of the invention, it is possible to predict a sales volume or market share of the new product at the launch of the new product into a market.

Using the initial input prediction system for a new product according to the second through the seventh aspects of the invention, it is possible to predict a sales volume or market share of the new product at the launch of the new product into a market. It is also possible to narrow down ambiguous evaluation items regarding products and choose evaluation items which have the largest influence over the sales volume or market share upon the launch into the market. It is further possible to quantify vague evaluations made by the human beings, and therefore, apply to marketing in the future.

Using a computer reading the recording medium according to the eighth through the tenth aspects of the invention, it is possible to use the computer as the initial input prediction system for a new product of the present invention, and execute the initial input prediction method for a new product of the present invention.

As this invention may be embodied in several forms without departing from the spirit of essential characteristics thereof, the present embodiments are therefore illustrative and not restrictive,

since the scope of the invention is defined by the appended claims rather than by the description preceding them, and all changes that fall within metes and bounds of the claims, or equivalence of such metes and bounds there-of are therefore intended to be embraced by

5   the claims.